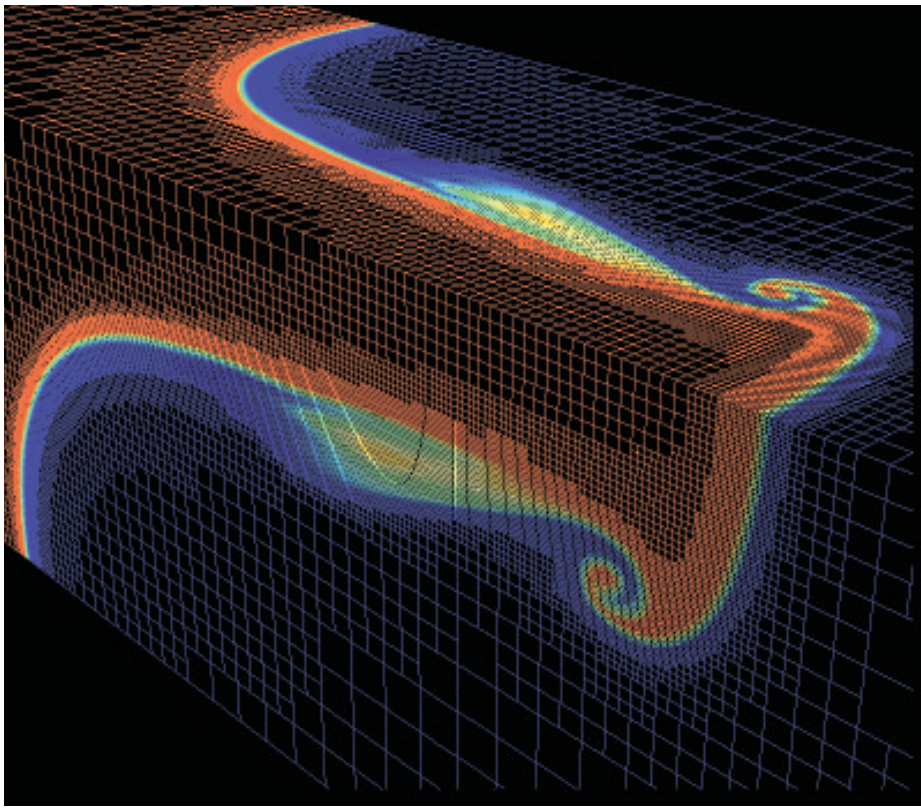
BITS computing&communications news

April 1998

COMPUTING, INFORMATION, AND COMMUNICATIONS (CIC) DIVISION • LOS ALAMOS NATIONAL LABORATORY



An important aspect of the Accelerated Strategic Computing Initiative is the development of scalable, parallel, 3-Dimensional (3D) simulation codes for the Science-Based Stockpile Stewardship program. The 3D RAGE code is part of the ASCI CRESTONE project at Los Alamos and has demonstrated massively parallel scalability. This image depicts a RAGE mesh simulation of a Richtmyer-Meshkov instability growth in 3D. The RAGE code features a unique form of continuous adaptive mesh refinement (CAMR) which allows high resolution of hydrodynamic features of the simulation, in this case the material interface between the air and the SF6. The simulation was developed by Bob Weaver (X-TA). The CRESTONE project is led by co-team leaders Mike Clover (X-CI) and Bob Weaver (X-TA), and by Mike Gittings (X-CI and SAIC), senior code architect. Visit the Web site at http://www-xdiv.lanl.gov/XTA/.

Inside this issue

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Because of the wide variety of CIC computing services, numerous facilities are available to address your questions. If you are uncertain whom to call, you can always call the Customer Service Center (CSC). CSC consultants are trained to either answer your question or locate someone who can. To reach the appropriate consultant, dial 665-4444 and make your selection from the following choices:

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PC computing.....PC-help@lanl.gov

UNIX computing.....UNIX-help@lanl.gov

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Advanced Computing Laboratory.....665-4530

Central Computing Facility.....667-4584

Network Operations Center.....noc@lanl.gov or 667-7423

Telephone Services Center.....667-3400

CIC-14 Becomes a Bridge to Human Knowledge

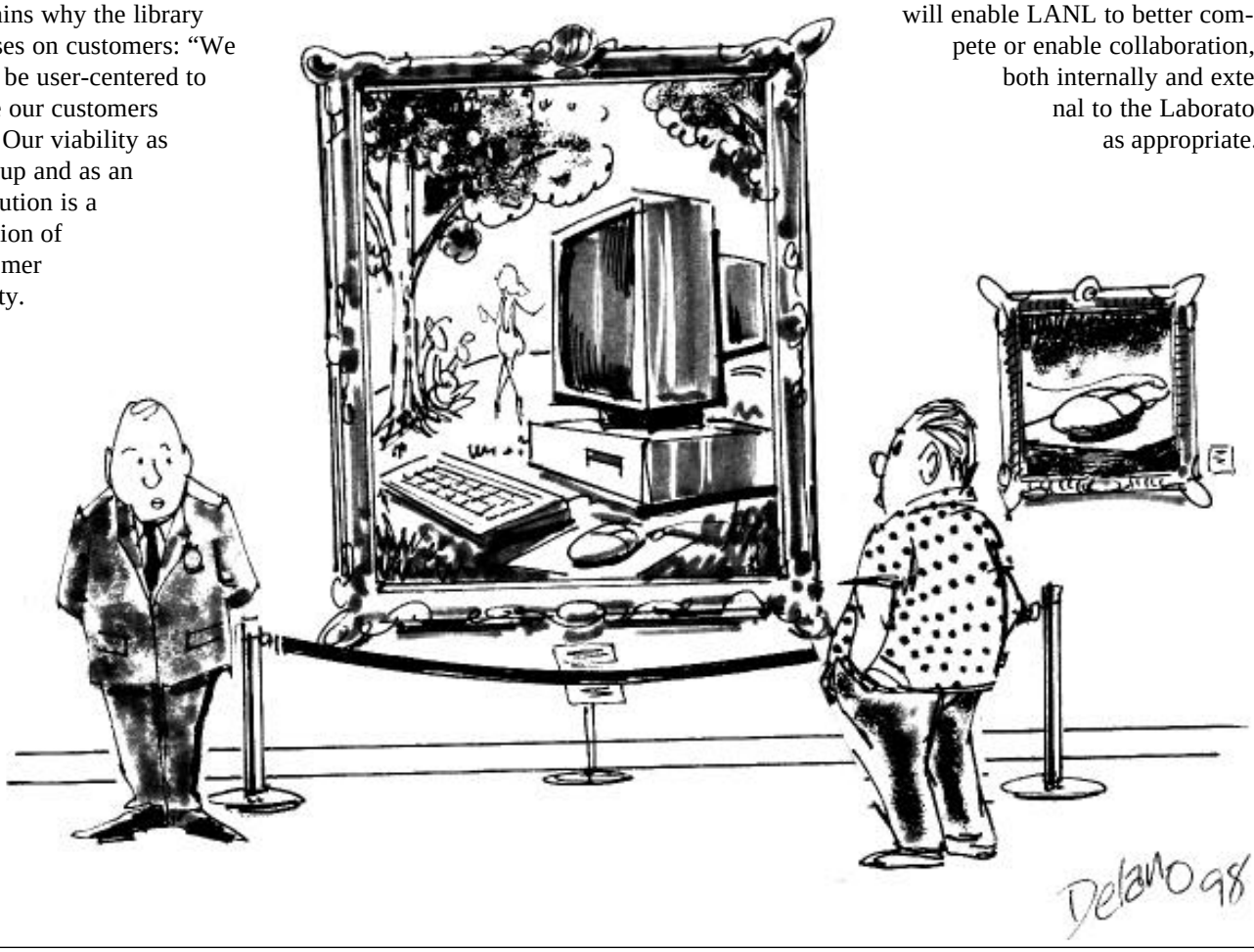
This article is one in a series of interviews BITS is conducting with CIC managers to get their views of the "big picture" as it relates to their work and the Laboratory mission. These people have also been asked to do a little forecasting as it applies to their business. BITS invites readers to join in the spirit of these interviews, treating the forecasts as a sort of informed speculation without holding anyone's "feet to the fire" to make the predictions come true.

The designation "The Library Group" hardly fits anymore. Yes, CIC-14 still operates a library; people can come in and browse the stacks, but the group's organization and focus have changed in response to customer needs. As a result of discussions with customers as well as frequent surveys, the group is now organized around product teams. "Product output teams" include the books and journals team, including electronic books and journals; electronic databases (the newest); reports team; customer services; and the Library Without Walls (LWW) team. The business support and resource team sustains the product teams.

Group Leader Rick Luce explains why the library focuses on customers: "We must be user-centered to serve our customers best. Our viability as a group and as an institution is a function of customer loyalty. Customer loyalty is not just a result of satisfaction—it's a function of delight. Otherwise, today's customers could just as well go elsewhere." The group formally surveys one fourth of its customers quarterly; thus, each library customer has an opportunity to collaborate with the library on its future directions at least once each year.

The Future of Knowledge Management

Customers have told Luce and his teams that electronic access to information is essential. But Luce takes the idea a giant step further. "It's not enough to collect scientific data from the outside and add it to our own. Our job now is to wire people's brains together so that sharing, reasoning, and collaboration become almost instinctive and part of everyday work." Luce sees the LANL Research Library of the future as an organization that does much more than collect ever larger amounts of information digitally. "The challenge is to organize, manage, and add value to the information to make it useful, especially for scientific collaborations," he says. He sees the role of the library in the future as one of "knowledge management": making more effective use of the intellectual capital of the Laboratory. This will enable LANL to better compete or enable collaboration, both internally and external to the Laboratory, as appropriate.



To manage knowledge effectively, we need to tap our "corporate intelligence," which includes the following components and related tasks:

1. Archives of documents, collections. Maintaining these is the most traditional library role.

2. Dynamic scientific databases for accessing scientific literature. (e.g., SciSearch at LANL, BIOSIS at LANL, etc.) We must build and maintain these as customer needs evolve.

3. High-bandwidth, multimedia communications; e.g., CNN-type multimedia, experimental simulations, and so on, not only text. Our task is to integrate these components.

4. Organizational human knowledge—knowledge of corporate resources—the who knows what; who does what? We will map this component of corporate intelligence.

5. Information analysis. We will perform this task by focusing on real needs as identified through dialog with customers.

The added value of performing these tasks is in the recognition that everyone is, in fact, drowning in information, and time is precious, so the tasks must be focused in such a way as to make information useful. Knowledge must be presented in such a way that it can be easily tapped and integrated into a whole that is coherent and makes sense to the user. The group's customers say the library is on the right track with the LWW digital library project. (The LWW will be a topic of another article in this series.) The group has also found that the library must adapt its products to the customers' work environments. An example is integrating SciSearch citations into users' personal bibliographic management tools.

Getting There from Here

"Our task over the next few years is to complete the bridge between the traditional library paradigm and new digital library services," Luce says, "although we will always maintain a physical space and physical collections." At the present the library has some 1,600 physical journal subscriptions, of which roughly 700 are also available electronically. During the transition library users will have access to both versions. "As we learn how people use these new formats, we will probably make a gradual move to the electronic-only versions for many titles," Luce adds. There are also some 260 electronic books such as Encyclopedia Brittanica, which have come on-line in a sort of "ripple effect" from the journal world.

When asked what are the impediments to getting more journals on-line, Luce explains that publishers are still learning how to make a paradigm shift from paper presses. They understood how to make money in the paper world, and they are relatively slow to adopt new technologies. Many see a threat to their business, including concerns about pirating, lost profits, and copyright issues. There are some innovative, although user unfriendly, solutions being tried or in the development stages: pay-per-view schemes and software for read-only documents so that they cannot be saved or copied.

Being proactive about future directions involves training library staff to have a far greater depth of knowledge of customer needs as well as more comprehensive knowledge about information technology as it develops. The staff, in turn, helps users to increase their understanding; an example might be explaining what a database such as SciSearch at LANL is optimized to do as well as how to use it. In addition, the library recognizes that LANL users have a wide variety of skill levels and sophistication. The group takes responsibility for raising these levels by providing classes.

The Research Library's vision of itself has changed from that of the "knowledge archive" to one of being a vital partner with its customers in managing knowledge. The group carries out its end of the partnership by keeping in close touch with customers' present needs and keeping an eye on the future of technology and innovations in information management that will maximize the benefits of this partnership.

Luce is the Research Library Director at Los Alamos National Laboratory and the Project Leader of the Library Without Walls. He received a 1996 LANL Distinguished Performance Award for contributions supporting science and technology through the transformation of the Research Library. He is known nationally for his work in linking heterogeneous library systems. He is an avid road cyclist and likes to spend time with his family exploring the Southwest.

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Communications Arts and Services (CIC-1)

Forecasting Wildfires and Other Crises

Newspaper headlines constantly remind us of the human and property losses from wildfires, severe storms, earthquakes, and other disasters. The ability to forecast the progress of crises would significantly reduce human suffering, loss of life, destruction of property, and expenditures for recovery. The U. S. National Research Council and the United Nations, which designated the 1990s as the International Decade for Natural Disaster Reduction, are focusing national and international attention on this area.

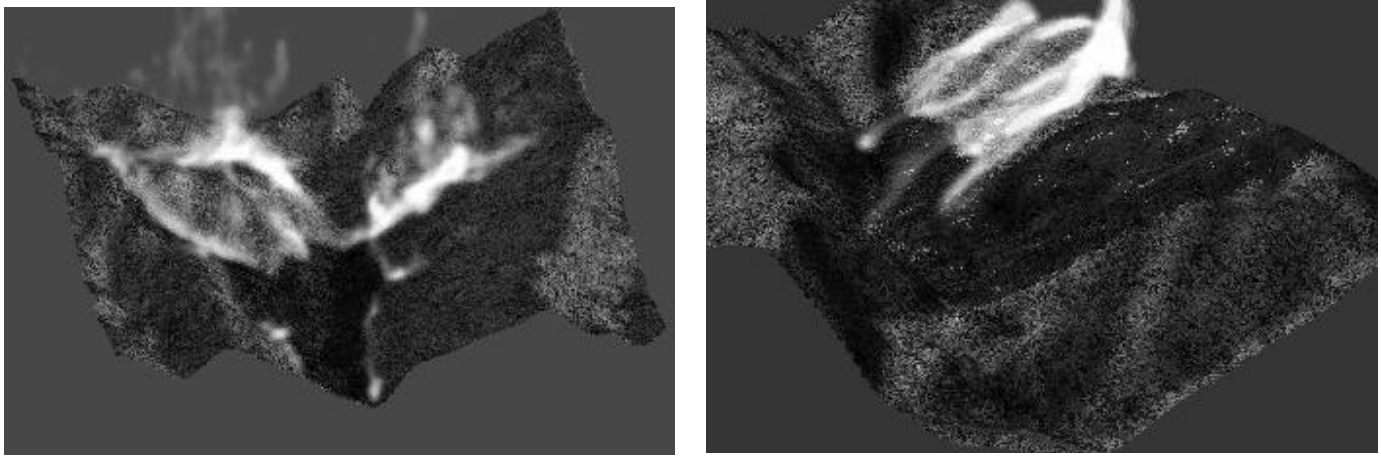
Computational science is now at a point where predictive simulations, or forecasts, of crises may be possible. We have established an effort, financed internally with Laboratory Directed Research and Development funds, to address this challenge. Our goal is to develop the capability to predict the course of an evolving crisis and, thereby, understand the effects of the emergency on lives and property.

Los Alamos National Laboratory has had tremendous success in simulating dynamic, physical processes; in fact, modeling and simulation constitute one of the traditional, core competencies of the Laboratory. Results of these efforts have been qualitatively correct and have indicated that quantitative prediction is now within the realm of possibility. Examples of our successful forecasting include predicting ice ages, predicting the flooding of Venice, and detecting tax fraud.

Because many crises are strongly linked to weather forecasting, we are working to develop an atmospheric dynamics code for high-resolution and strong gradient (HIGRAD) applications. We run this new model in conjunction with an established intermediate-scale model, the Regional Atmospheric Modeling System, to address weather-related crisis prediction problems. HIGRAD uses advanced numerical techniques and parallelization schemes that take full advantage of multiprocessor technologies to improve the model's forecasting accuracy and computational speed. These developments will enable us to achieve a high-resolution forecasting capability on clusters of workstations.

Predicting the unfolding of events associated with natural disasters requires more than a fast, accurate weather forecast. For a full understanding, weather prediction capability must be used in conjunction with other crisis-specific models and statistical procedures. Wildfire prediction is a prime example. To predict the course of a wind-driven fire in a small mountain valley, wind and fire behavior over the terrain must both be resolved. To do so, we have coupled our high-resolution weather prediction model to a simple fire behavior code in preparation for linking it to a more sophisticated wildfire code. The combined modeling system is being used to study and predict the constantly evolving interaction of the atmosphere with wildfire fuels.

We have successfully simulated several small fires, including a 1-square-kilometer area of the October 1996 Calabasas Fire in Los Angeles County and the July 1994 South Canyon Fire near Glenwood Springs, Colorado. The California wildfire overtook several firefighters and threatened many expensive homes. The Colorado blaze took 14 firefighters' lives when it



These computer visualizations show the Calabasas, California, (left) and the Glenwood Springs, Colorado, (right) wildfires. In the color version of these images, the hottest regions are yellow, cooler regions are orange, and the coolest regions are white. Computational forecasts of wildfires may someday help save lives and property.

went out of control in a heavily forested area. Accelerated by 40-mile-per-hour winds, the fire swept up the canyon and overtook the firefighters in less than 30 minutes. Such events illustrate the need for models with high temporal and spatial resolution to provide timely, reliable predictions of rapidly changing events in crisis situations.

This summer, in partnership with the County of Los Angeles Fire Department, we will instrument a controlled burn to obtain data to validate our models. This spring, working with NASA and the U. S. Air Force, we will conduct similar tests at the Kennedy Space Center.

The possibility of using high-performance computing with modeling and simulation to forecast the effects of evolving crises presents us, and those organizations that we are working with, a unique opportunity to prove that computational forecasting can become an invaluable tool for managing the future.

For more information, contact Andy White at (505) 665-4530, abw@lanl.gov, or view the project Web page at http://www.acl.lanl.gov/Applications/crisis/crisis.html

Lab Considers Group Subscription for HPCwire

Los Alamos National Laboratory is reviewing the possibility of obtaining a group subscription to HPCwire, the worldwide journal of record for all aspects of the High Performance Computing (HPC) industry. Devoted primarily to ongoing developments across the entire spectrum of computationally-intensive hardware, software, and integrated systems technology, HPCwire also covers related business, corporate, economic, and governmental news in a timely and easily-accessible, text-on-demand format. Authoritative commentary and analysis by HPC insiders and professionals are also included regularly to ensure maximum value for readers, no matter how complex the issues. HPCwire is a weekly electronic publication that has delivered over 1.4 million news stories to over 30,000 readers world wide. Below is a very small sampling of HPCwire's top stories from 1997.

- Parallelism Spurs Supercomputer Industry Rebound
- Vector Supercomputers Disappear in 5-10 Years according to John Hennessy, Dean of Stanford's School of Engineering
- Performance Computing in the Wintel World, a 3 Part Series
- Cray Introduces the T3E-1200
- SGI & Microsoft Form Strategic Alliance
- Sun Leverages Enterprise Strengths, Releases HPC 2.0
- Sale of IBM Supercomputers to Russian Lab Investigated
- SGI Restructures, McCracken & Lauer Resign, Jobs Cut

A sample issue of HPCwire is available at the following URL: http://www.tgc.com/freehpc/sample.html

Annual rates for HPCwire's Group Discount Program are based on the number of subscribers as shown below.

0 - 15	$ 645.00 (43.00 each)
16 - 30	$1,230.00 (41.00 each)
31 - 50	$1,925.00 (38.50 each)
51 - 100	$3,700.00 (37.00 each)
101 - 200	$4,200.00 (21.00 each)
201 - 300	$5,400.00 (18.00 each)
301 - 400	$6,600.00 (16.50 each)
400 - Up	$15.50 each

If you are interested in participating in a HPCwire Group Discount subscription, contact Frances Knudson as shown below. Please include your cost center and program code. The cut-off date for subscribing is April 15, 1998.

Frances Knudson, knudson@lanl.gov, (505) 667-9233
Research Library (CIC-14)

The Los Alamos RAGE Code: Scalable, Parallel Performance

An important aspect of the simulation codes being developed for the Accelerated Strategic Computing Initiative (ASCI) is the ability to calculate three-dimensional (3D) hydrodynamics. The 3D RAGE (Radiation Adaptive Grid Eulerian) code is part of the Los Alamos ASCI CRESTONE Project, which is led by co-team leaders Mike Clover (X-CI) and Bob Weaver (X-TA) and by senior code architect Mike Gittings (X-CI and SAIC).

The initial goal of the CRESTONE project has been met by producing a parallel version of the continuous adaptive mesh refinement (CAMR) 3D code RAGE. The primary emphasis in this development effort has been scalability, useability, portability, and reliability, and little effort has been spent on optimizing for efficiency on any specific machine. We are now running real problems on the SGI/Cray Origin 2000 (Los Alamos) computers, as well as on the Intel TFlops (Sandia) ASCI Red machine and the ASCI Blue Pacific IBM SP2 (Livermore) computers.

After a period of initial alpha and beta testing for this parallel RAGE version, the code is now being used for production work on the ASCI computers at Los Alamos and Sandia. As part of the beta-testing work, a proof of scalability was done by running a series of simple hydrodynamic problems to assess the speedup of the RAGE code as more processors are used. This scaling study used a constant number of cells per processor (one set used 13,500 cells/processor, while another set used 54,000 cells/processor). Figure 1 shows the results of this study. On the Sandia Red machine (an MPP architecture)

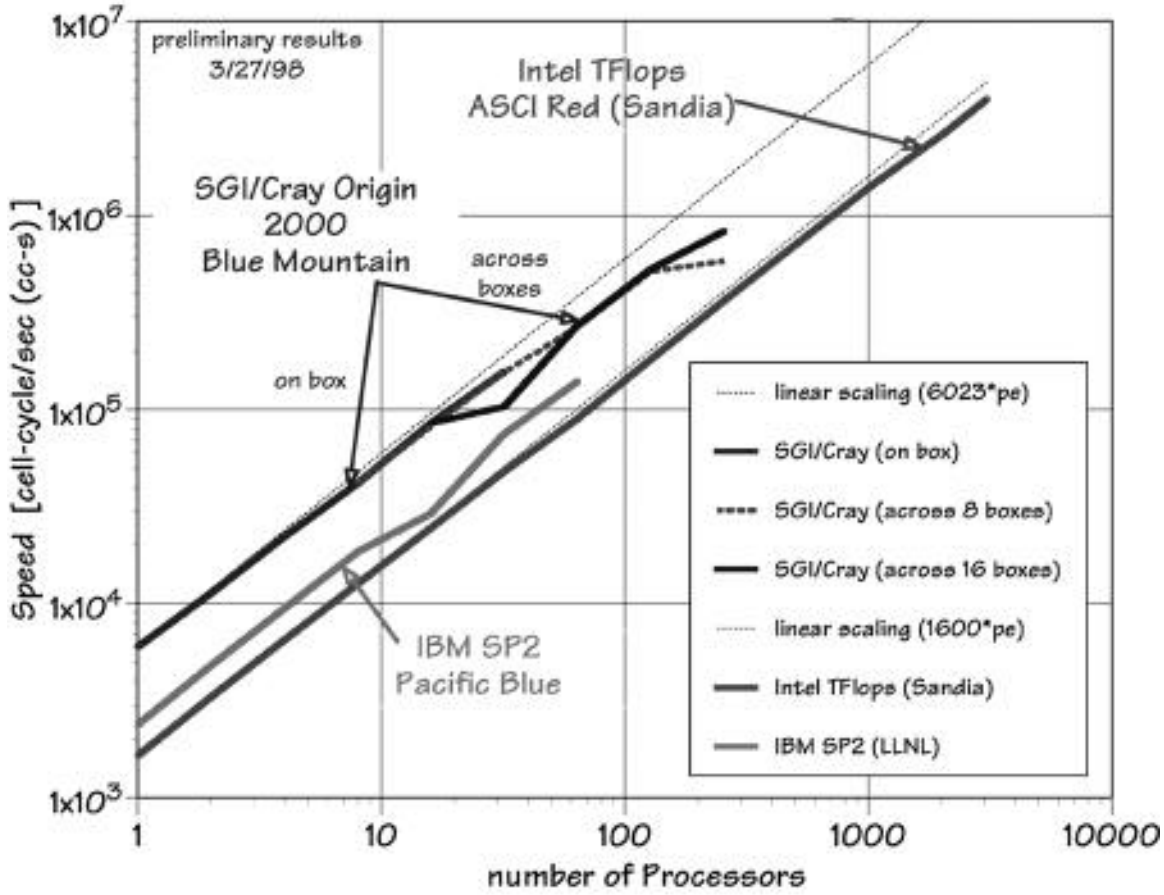


Figure 1. A Demonstration of the Scalable Nature of the Parallel Algorithms Developed for the RAGE Code. This figure shows the speed of the calculation (cell-cycles per second equals inverse grind time) as a function of the number of processors. The upper two sets of curves are from SMP machines: the Los Alamos SGI/Cray Origin 2000 computers (Blue Mountain, out to 256 processors, across 16 boxes) and the Livermore IBM SP2 computers (Blue Pacific, out to 64 processors). The lower line is from the Sandia ASCI Red machine, an MPP Intel TFlops machine which has run these scaling studies up to 3072 processors with linear scaling.

we have successfully run on 3072 processors with near linear speedup. For the SGI/Cray Origin 2000 at Los Alamos, we have successfully demonstrated scalability up to 256 processors, both within a single box and across multiple boxes (as many as 16). The ASCI collaboration between SGI/Cray and Los Alamos is proving to be valuable because the machine performance shown in Fig. 1, as a result of daily interactions among Los Alamos ASCI code teams and SGI staff, is greatly improved over that of just a few months ago.

The previous production version of the RAGE code was a Cray Fortran77 vector version which is still being used extensively for a wide variety of physical simulations of 2D and 3D hydrodynamics and radiation-hydrodynamics problems. This F77 version of the RAGE code was originally developed by Mike Gittings while at Science Applications International Corporation (SAIC) in the early 1990s. These problems range from state-of-the-art 2D and 3D Richtmyer-Meshkov (RM), Rayleigh-Taylor (RT), and Kelvin-Helmholtz (KH) simulations, to 2D ablation RT target design and analysis of NOVA experiments to full 3D NOVA hohlraum calculations.

The production Cray vector version of the RAGE code has been capable of performing large 3D radiation hydrodynamics calculations for several years. Unfortunately, only a small number (~5) of 3D runs have actually been performed because the vector hardware is not adequate for 3D calculations, primarily because of poor speed and low memory allocations. For example, the 3D Richtmyer-Meshkov instability simulation shown in Figure 2 took 7 months to complete and required over 1600 hours of CRAY YMP time (on machine GAMMA, the only CRAY machine that had enough memory to run this simulation). This calculation required 4.6 million cells and 0.48 GW of RAM; it ran with a cell-cycles per second of 8,185 and took about 600 seconds per cycle. Although this calculational speed is not state-of-the-art, the use of CAMR techniques results in comparable turn-around time to other modern methods, such as PPM. In any case, these turnaround times for a simulation are unacceptable and represent the driver for ASCI scale machines. We are in the process of rerunning this simulation on the Los Alamos Blue Mountain machine and the Sandia Red machine. We believe that the turnaround time can be kept to a couple of weeks maximum. This level of enhanced performance for the new SGI/Cray Origin 2000 machine at Los Alamos was demonstrated recently. A 2D, highly-resolved, RM instability calculation that took five months and 1240 Cray YMP hours to complete was rerun on a single box SGI/Cray Origin 2000 and finished in 40 wall-clock hours. The turnaround time was increased by nearly a factor of 100!

The RAGE code has a very broad community of users in X-Division. Currently, RAGE calculations consume the largest number of CPU cycles in the open-partition of the Los Alamos Central Computing Facility (CCF) on the vector Cray hardware.

From an applications perspective, RAGE is fun to use, and it has some similarities to Lagrangian codes. In these codes you could set a variable and see periodic images of the hydrodynamic flow appear on your computer screen. The use of RAGE also provides a renewed interest in examining physical phenomena in as much detail as the hardware memory will allow. This capability is made possible by the continuous (i.e., cell-by-cell and cycle-by-cycle) AMR methods employed.

In almost every application, the use of RAGE has allowed the user to examine new physical situations and systematically discover new phenomena that are generally not accessible by Lagrangian methods. Simply, many of our physical problems have highly unstable hydrodynamic flows and Eulerian codes naturally allow for linear and nonlinear instability growth, whereas Lagrangian codes can usually follow only the linear instability growth phase. The RAGE 3D simulation of a

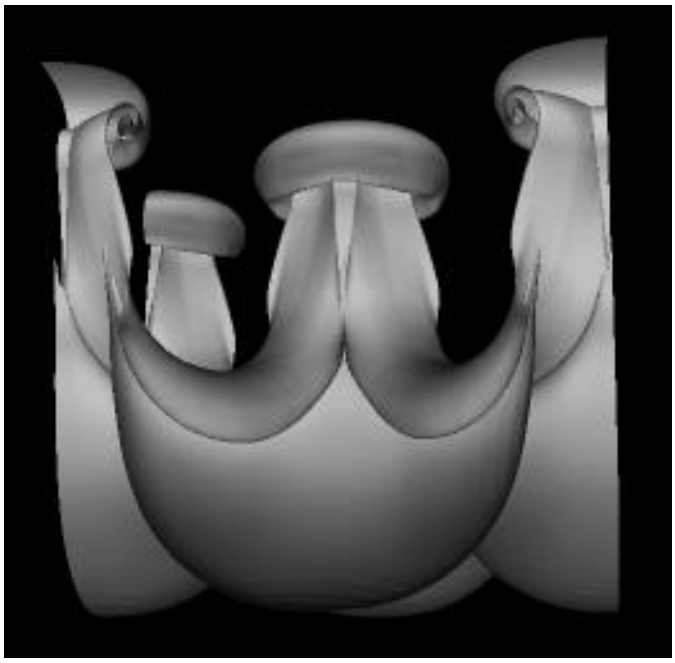


Figure 2. The RAGE 3D Simulation of the Growth of a Single-Interface, Single Mode Shock-Generated Instability. This figure shows an isosurface of density colored by the magnitude of the material velocity.

single-interface, single mode Richtmyer-Meshkov instability growth shown in Figure 2 is an example of this enhanced capability. The graphic in Figure 2 shows a late-time isodensity surface from a RAGE simulation of a fully nonlinear growth phase (~2 ms).

We believe that the most time-consuming part of developing a major new code resource for X-Division involves the endless validating and benchmarking activities required for the applications groups to have confidence in the calculated results. These new ASCI codes must be benchmarked and validated against a wide variety of problems, including analytic hydro, and rad-hydro test problems; detailed comparison to experimental results (see below), and numerous "code-code" type comparisons to well accepted production codes. The RAGE code has been extensively validated, with great success, against a wide variety of laboratory experiments and test problems, including analytical test problems such as the full X-division hydro and rad-hydro analytic problems, and code-to-code test problem comparisons. For more information, refer to the article: "Simulation of Shock-Generated Instabilities," [Physics of Fluids 8 (9), September 1996] which shows RAGE CAMR simulations of the DX-3 SF6 gas curtain experiments. Figure 3 is an illustration taken from the results of this article.

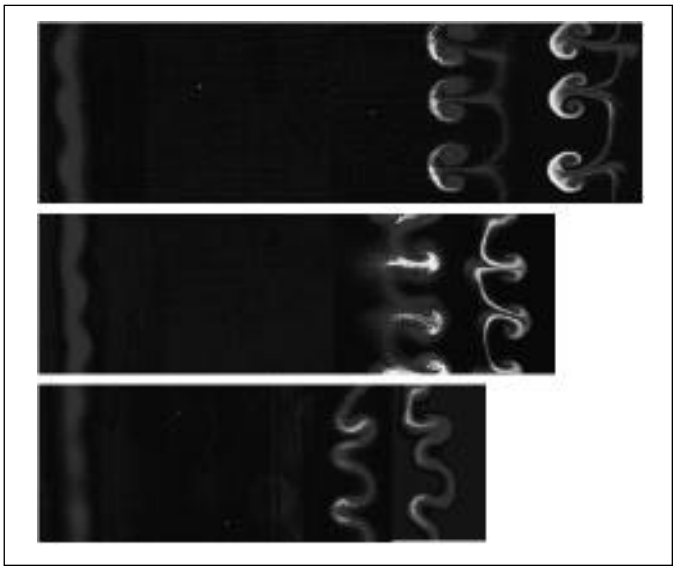


Figure 3. The Comparison of Experimental Images from the DX-3 Shock-Tube Experiment to Those from RAGE Simulations. The experimental initial conditions are shown on the left side of each panel, whereas the right side shows the downstream experimental results and the RAGE simulations (offset).

The benefits of the RAGE revolution, however, do not come without a price. No code is perfect, and no code currently available will solve all classes of problems. RAGE is no exception. Our basic philosophy for the development of the RAGE code is to identify the deficiencies of the code and then use this knowledge as a guide for planning code improvements.

One of our main tasks, currently, is to improve the fundamental hydrodynamics in the code. With Eulerian hydro it is easy to see the growth of instabilities. However, it is actually quite difficult to run an "unperturbed problem" because numerical asymmetries also produce instabilities that grow. The discretization of the materials into mesh cells, in and of itself, introduces perturbations that typically are larger than material surface finishes. In light of these numerical artifacts, we need to assess how much of the calculated instability growth is real and how much is numerically induced. Work continues on understanding the current code for this issue in parallel with code development to improve the hydrodynamics capability of the RAGE code by adding contact surface front tracking, interface reconstruction, and generally improved hydro/advection schemes.

Robert P. Weaver, rpw@lanl.gov, (505) 667-4756
Web site: http://www-xdiv.lanl.gov/XTA/
Thermonuclear Applications Group (XTA)

Tips for Desktop Users Available on the Web

The Desktop team of CIC-6 (Customer Service Group) provides up-to-date Web pages with information for PC and Mac users at LANL. You will find information about such topics as dial-up access to LANL machines, connection to Labwide systems IA and IB, and utilities for Windows 95 and NT users. To access this Web page (shown below), enter http://c6help.lanl.gov/

CIC-6 Desktop Support Web Stop

NEW!!! WELCOME THE NEW MILLENNIUM (IS YOUR PC READY FOR THE YEAR 2000?) FIND OUT

NEW!!! ASCI, KERBEROS, and SSH at LANL

NOTICE!!!!!! CHECK OUT THE MAC TEAMS INFO PAGE

NEW!!! All you ever wanted to know about dialing into LANL

NEW!!! Network printing for Win95 (replaces pmlpr)

How to connect to IB

Word Macro Virus info

Having problems installing Jetforms ????

NEW!!! Telnet client to connect to IA

LANL templates for Microsoft Word (Mac and PC)

Do you need to open Word 97 documents in an earlier version of Word?

Microsoft NT 4.0 (Service Pack 3)

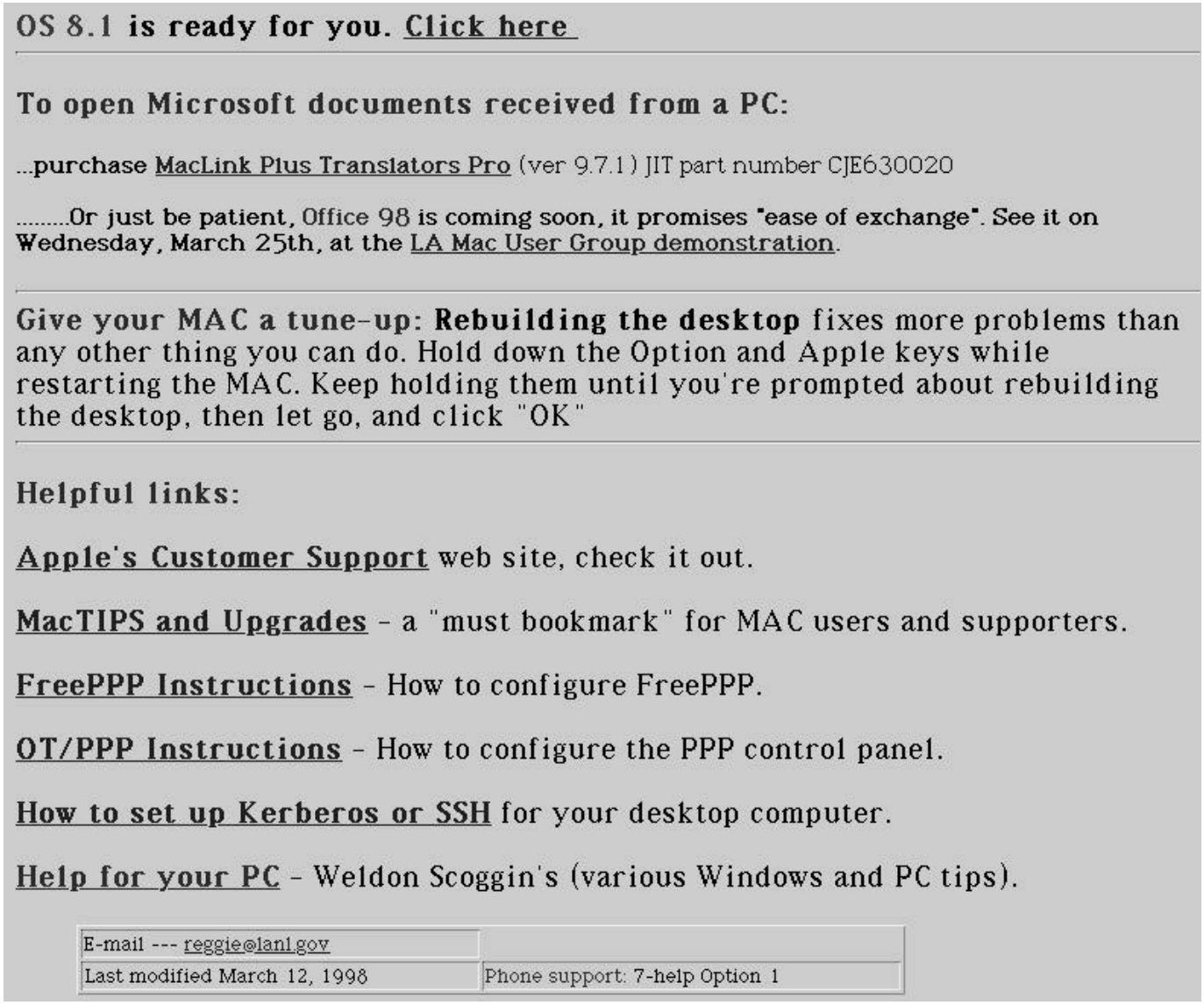
Some of our favorite NT utilities

Some simple network utilities 95/NT

NEW!!! Windows 95 Tips from the Trenches

Questions or comments? Send e-mail to desktop@lanl.gov

One of the links listed on the Desktop Support page is the CIC-6 Mac page (below) at http://reggie.lanl.gov/ which provides Mac tips and links to various other Mac Web sites. For more information send e-mail to desktop@lanl.gov or phone 7-HELP.



OS 8.1 is ready for you. Click here

To open Microsoft documents received from a PC:

...purchase MacLink Plus Translators Pro (ver 9.7.1) JIT part number CJE630020

.....Or just be patient, Office 98 is coming soon, it promises "ease of exchange". See it on Wednesday, March 25th, at the LA Mac User Group demonstration.

Give your MAC a tune-up: Rebuilding the desktop fixes more problems than any other thing you can do. Hold down the Option and Apple keys while restarting the MAC. Keep holding them until you're prompted about rebuilding the desktop, then let go, and click "OK"

Helpful links:

Apple's Customer Support web site, check it out.

MacTIPS and Upgrades - a "must bookmark" for MAC users and supporters.

FreePPP Instructions - How to configure FreePPP.

OT/PPP Instructions - How to configure the PPP control panel.

How to set up Kerberos or SSH for your desktop computer.

Help for your PC - Weldon Scoggin's (various Windows and PC tips).

E-mail --- reggie@lanl.gov	
Last modified March 12, 1998	Phone support: 7-help Option 1

Content Labeling and Signing: Getting Ready for Filters

The "free and open exchange of ideas" that has characterized the Web to date seems likely to change soon. The other day I was looking through e-mail using one of the newer tools that supports embedded HTML. This enables us to write e-mail messages that look and act like Web pages, including, for example, images and animations that can be loaded into the message from far across the Web.

One of the messages was an unsolicited spam (unsolicited junk e-mail) from someone who found my e-mail address from who knows where. When I opened it up, it started loading an image across the Laboratory networks—an image of a naked woman. True story, that one, and while I appreciate individuals' rights to create and distribute such images, I'd also appreciate a better ability to control what lands on my desktop. Note the following current trends:

1. As enhanced e-mail and "push" technologies spread more widely, content providers gain more control over what we see. Instead of the old Web paradigm where we go out and look for information, richer content can be delivered to us without our asking for it.

2. Although I don't yet know of specific cases, I expect that the e-mail enhancements will carry some security risks. With standard text-only e-mails, we've been able to say that it's safe to open any message, though not necessarily its attachments. With the newer tools, though, I worry that the rush to implement new features carries risks of the same types of problems we've seen with the browsers themselves.

3. What gets delivered will not always be what we expect or ask for. As easily as an image of nudity, what gets delivered could be a potential attack on our desktop machine or our network.

Given this situation, "free and open exchange" almost certainly needs to be restricted to people we can trust, while the world at large will be granted something closer to a "limited and cautious exchange."

The capabilities to filter what we look at before we look at it have been primarily emerging from the effort to allow parents to control what their children view without imposing censorship on others. The value extends beyond that specific issue, however, and a growing number of us are likely to make use of the tools. Maybe we'll want to filter search results to prefer sites associated with certain professional organizations. Maybe we'll want to erect barriers against sites known to have launched security attacks in the past. Whatever our preferences, trust is what we'll be looking for.

The implication for Web authors is this: If we want our content to remain in the more widely accepted category, we need to look for ways to establish that trust for our audience. Otherwise, regardless of the inherent value of our content, we might find our content filtered out along with the flames, attackers, and other such garbage.

Current Status: Signatures, Ratings, and Labeling

An ideal solution would be if we could attach a marking onto a page that proves who wrote the page, what the author asserts about the page (is it a draft or final version?), and that the page has not been changed since the marking was attached. This is what's known as a digital signature, which is essentially the same thing as the "certificates" which I described in the August 1997 BITS article, "Active Content and Web Browser Security."

The World Wide Web Consortium (W3C) has issued a specification for applying such signatures to Web pages, "DSig 1.0 Signature Labels: Using PICS 1.1 Labels for Making Signed Assertions." As of this writing, the specification is a W3C Proposed Recommendation, which indicates it's basically stable, but there seems to be little software that supports it yet.

There has been more progress on the Platform for Internet Content Selection (PICS), which specifies ways of labeling a page's content. For example, a PICS label can be used to let software know what a page's ratings are for adult language, HTML conformance, or whatever else we might choose to rate a page by.

The W3C work to date on PICS has resulted in three W3C Recommendations:

- PICS Label Distribution Label Syntax and Communication Protocols (PICS Labels): Specifies how pages should be labeled.

- Rating Services and Rating Systems (and their Machine Readable Descriptions): Specifies how rating services and systems should describe themselves to software.

- PICSRules 1.1: Specifies a language for filtering tools.

Of these, the first is most directly relevant to Web authors because it describes what we actually put into a page.

PICS labels are becoming more widely supported. Microsoft supports them in the off-the-shelf Internet Explorer, products such as CyberPatrol and SurfWatch support PICS labels

under various browsers, and various products are appearing for filtering at a proxy or ISP (Internet Service Provider). Along with this, USA Today estimates that some 5-10% of Web sites have already been rated.

PICS and Censorship

Before getting into the details of how and when to rate Web content, it might be useful to acknowledge that a number of people are uncomfortable with PICS because it might be used to impose censorship on the Web. The argument is that groups with a particular agenda can use PICS to block access to sites they don't approve of. Under a "what is not permitted is prohibited" approach, they could conceivably block access to all but a handful of preapproved sites. At our Laboratory, that has always been a contentious issue. There is, however, nothing new about this filtering capability. Groups can already use proxies and network filters to achieve the same type of blocking. PICS, in this context, simply makes filtering more flexible.

For individual users on their own time, the use of such services is a personal option. For company networks, such filters can be (and frequently are) already imposed on access to external sites. For an organization such as our Laboratory, the issue has always been one of balancing academic freedom and collaboration against network security and legal concerns.

PICS doesn't change any of these broad issues, and there's nothing about the specification to suggest that it will contribute to abrupt restrictions on our use of the Web.

What PICS does do is offer a framework that's far more flexible than, say, the TV ratings that the "v-chip" can use to block shows. PICS gives us the options of trusting content providers' self-ratings or preferring a trusted third-party's ratings, of looking for content we'd prefer or avoiding content we dislike, of making our own decisions about which content to accept or permitting someone else to make those decisions for us.

PICS does not make it more likely that we as Web users will encounter additional unwanted restrictions from the outside, but it does give each of us individually more control over the content we view. PICS also makes it more likely that we as Web authors will find the access to our pages affected, either with more of our intended audience finding the pages because we've labeled them well or with our pages getting blocked by a group of users because we haven't labeled them.

When Is Labeling Appropriate?

PICS labeling is not always worth the effort it requires. This may eventually become mitigated by authoring tools that make it easier to set default labels, but for now, labeling generally requires communications with a ratings group and direct editing of the HTML code. Hence, working drafts, team-internal materials, and personal-use pages are at the extreme of materials that don't warrant labels.

At the other extreme are stable public pages that represent finished work that we want to make accessible to as broad an audience as possible. For the Information Architecture Project, for example, I have rated our home page, standards page, and library with three different ratings groups: RSACi, CyberPatrol, and SafeSurf. I have not, however, rated any of the restricted-access areas that the public can't access anyway.

Another reason for Web authors to experiment with PICS labeling is to develop familiarity with the process. Even though most current labeling deals with appropriateness of content, that is likely to change with time. As other labeling capabilities emerge, we may find it to our benefit to already know how to use them.

How to Label a Page

In the PICS model, content can be labeled by inserting a label into a page's header, by putting the label into an external document that is referenced from the page, or by referring to a third-party "label bureau" (i.e., rating service). Of these options, the first and third are currently most common.

When the label is received by, for example, a PICS-capable browser, the browser evaluates the label against settings the user has made for which content to accept. If the label indicates the content is acceptable, the body of the page will be displayed. Otherwise, the content will be blocked.

In addition to browsers, proxy software might read PICS labels to determine whether to pass content along to the client. A search engine might read the label to determine what priority to assign a page in search results. Or an indexing robot might read labels to determine whether to add a page to its index.

When a label is inserted into the header of a document, a META tag is used with an http-equiv="PICS-Label" and a content attribute that contains the tag itself. For example, the SafeSurf label on the IA home page is constructed as follows:

<META http-equiv="PICS-Label"content='(PICS-1.0 "http://www.classify.org/safesurf/" l gen true for "http://www.lanl.gov/projects/ia/" by "tad@lanl.gov" r (SS~~000 1 SS~~100 1))'>

In this label, "PICS-1.0" indicates the version of PICS to use; "http://www.classify.org/safesurf/" indicates the location of the label vocabulary (i.e., how to interpret the "SS~~" assertions in this example); "http://www.lanl.gov/projects/ia/" is the location of the labeled page; "tad@lanl.gov" identifies the person who created the label; and "SS~~000 1 SS~~100 1" uses SafeSurf's vocabulary to identify the recommended age range and assert that the page contains no adult themes.

Fortunately, we don't need to type all of that information in. Instead, the easier approach is as follows:

1. Go to the labeling bureau's Web site.

2. Fill out an on-line form self-assessing your content.

3. The labeling bureau will e-mail you the appropriate label.

4. Cut the label from the e-mail and paste it into the page.

For labeling bureaus that maintain their own labels, the last two steps aren't needed.

Also fortunately, we don't need separate labels for each page (though we can go to that level of detail if we choose to). A label can apply to a single page, or an entire directory, or an entire Web site. In the example above, for example, the label applies to everything from "http://www.lanl.gov/projects/ia/" on down.

For More Information

For a list of PICS labeling bureaus and other PICS resources, please visit the IA General Internet/WWW activity area page at http://www.lanl.gov/projects/ia-lanl/area/web/ (access restricted to Laboratory machines). For more information about the IA in general, please visit our project home page at http://www.lanl.gov/projects/ia/. If you need printed or e-mail copies of any of the IA materials, please contact me via the information given below.

Tad Lane, tad@lanl.gov, (505) 667-0886
Information Architecture Standards Editor
Communications Arts and Services (CIC-1)

Research Library Training

The LANL Research Library provides training for using its specialized databases. Training sessions begin and end at times indicated below. Classes are free but you must preregister by calling the Research Desk at 7-5809 or sending e-mail to library@lanl.gov. Special classes and orientations can also be arranged.

Date	Time	Subject Matter
4/1/98	1:00–1:30 p.m.	Finding Addresses and Phone Numbers on the WWW
4/2/98	2:00–4:00 p.m.	InfoSurfing: Basic Web Searching Strategies
4/7/98	1:00–1:30 p.m.	GeoRef on the Web
4/9/98	1:00–1:30 p.m.	Federal Regulations on the Internet
4/14/98	1:00–1:30 p.m.	Introduction to Electronic Library Resources
4/15/98	1:00–1:30 p.m.	Research Library Tour
4/15/98	1:00–1:30 p.m.	Finding Addresses and Phone Numbers on the WWW
4/16/98	2:00–4:00 p.m.	InfoSurfing: Basic Web Searching Strategies
4/21/98	1:00–1:30 p.m.	SciSearch at LANL—At your desktop!
4/23/98	11:00–11:30 a.m.	MELVYL (U of CA specialized databases)
4/28/98	1:00–1:30 p.m.	Search Engines, Advanced Web Searching

Labwide Systems Training

The Customer Service Group (CIC-6) offers training for users of Laboratory information systems. The CIC-6 courses offer training for a variety of personnel including property administrators, group secretaries, training coordinators, budget analysts, group leaders, or anyone needing to access training records, property records, costs, employee information, travel, chemical inventories, etc. Refer to the table below for specific information about courses currently offered. You must have a valid ICN password before taking any of the courses shown in the table. To register for a course, call the CIC-6 Training, Development, and Coordination section at 667-9559 or access our Web page. From the LANL home page, look under "Services/Computing at LANL/Training/computers" or enter the following URL: http://www.lanl.gov/internal/training/training.html

Course Title	Date	Time	Cost	Course Number
Employee Development System–Basic Training (EDS I)	4/15/98 & 5/13/98	8:30–12:00	$375	Course #5289
	The course provides hands-on instruction to request course enrollment, use the on-line course catalog, retrieve training transcripts, and assign EDS authorities. The participant will learn to create courses, add participants to the courses, and generate several training reports. This course is for anyone who needs to retrieve, add, or update training records.			
Employee Development System–Training Plans (EDS II)	4/29/98 & 5/27/98	8:30–12:00	$375	Course #7155
	Participants receive hands-on instruction to create and maintain training plans, assign assignment codes, and generate training plan reports. Attendees must have prior training in the Employee Development System (course #5289).			
Eudora Electronic Mail	4/23/98 & 5/21/98	8:30–12:00	$375	Course #9762
	This half-day hands-on Eudora class teaches the participant how to create, send, receive and edit electronic mail messages. In addition to these basic procedures, the participant will learn to work with filters, signatures, stationery files, mailboxes and folders, and attachments. Also, the participant will learn what related settings mean and how to configure the system to meet this or her individual needs. Currently, this course is taught only on the PC, version 3.x. A Mac class will be forthcoming.			
Data Warehouse Basics	4/16/98 & 5/14/98	8:30–12:00	$375	Course #11961
	Students will receive hands-on training to generate standard reports and make quick queries from information in the data warehouse, a real-time collection of data tables from Laboratory financial, time-reporting, and personnel systems.			
Data Warehouse/ Financial Reporting	To be announced		$200	Course #11960
	Participants will receive hands-on training to generate reports and make quick queries from information in the data warehouse, a real-time collection of data tables from Laboratory financial, time-reporting and personnel systems. Solutions to everyday business problems will be used as examples.			
Foreign Travel (GUI)	4/30/98 & 5/22/98	8:30–11:00	$200	Course #12353
	This two hour course teaches participants the pre-trip required paperwork using JetForm Filler and the post-trip entry on the Travel GUI System. Prerequisite: Domestic Travel GUI (Course #12113) or permission of instructor.			
FrontPage Basics	4/22/98 & 5/20/98	8:30–12:00	$395	Course #14815
	Participants will learn the basics of laying out a Web site; gain understanding of the Explorer and Editor; create Web pages using templates and themes; add and alter text; customize and enhance the Web page; create links; insert and alter graphics; and layout and create tables. Course fee includes $20.00 text book charge. Prerequisite: HTML Basics (Course #11605) or permission of instructor.			

Course Title	Date	Time	Cost	Course Number
HTML Basics	4/14/98 & 5/12/98	8:30–12:00	$395	Course #11605
	Participants gain basic understanding of HTML (Hypertext Markup Language), the language for the World Wide Web. Topics covered include commands and standards, creating and editing HTML documents, linking to documents and graphics, and be introduced to authoring programs. Cost: Course fee includes $20.00 text book charge. Prerequisite: Utilizing Netscape (Course #10961) or a thorough understanding of the Internet and Web browsers.			
HTML Intermediate	To be announced		$395	Course #11959
	Participants gain basic understanding of how to create various tables in HTML and new tags in HTML 3.2. Netscape- and Internet Explore-specific tags are also identified for clarity. Topics will also include font size and color, background colors (including table cells), altering display and layout of text, and a discussion on creating style sheets and adding other multimedia. Cost: Course fee includes $20.00 charge for text book. Prerequisite: HTML Basics (Course #11605) or permission of instructor.			
Lotus Notes Basics 4.5	4/15/98	1:30–5:00	$375	Course #9917
	Participants receive hands-on computer instruction to learn to create and send Notes e-mail memos, fax documents, search on one or multiple databases, use views and folders, create nicknames and distribution lists, set defaults, create doclinks, send attachments, and replicate databases.			
Meeting Maker	4/7/98 & 5/5/98	1:30–5:00	$375	Course #12395
	Participants will not only learn the basics of Meeting Maker, but also they will learn how to use the product more efficiently. Specifically, students will learn to create activities and meetings, customize the Daily Calendar, create an address book, utilize the Auto-Pick feature, utilize e-mail integration with non-MM users, use and assign proxy functions, and use the Master Schedule (new feature for version 4.x). The class is taught using version 4.1.			
Purchase Card System (PCS)	4/8/98 & 5/7/98	1:30–2:30	$100	Course #11924
	Participants will learn to reconcile monthly statement of account, submit reconciled statement of account for approval, print statement of account for audit records, and delegate reconciliation authority. Prerequisite: PCS Overview (scheduled through Ruby O'Rear, 5-4523). Participants must attend PCS Overview which is scheduled through Ruby O'Rear, 5-4523.			
Reporting with Infomaker	4/28/98	8:30–5:00	$550	Course #11054
	Hands-on instruction to develop non-standard reports from the LANL data warehouse using Infomaker software. Target Audience: Budget analysts, project leaders, or any individual interested in tracking financial information that they cannot get from "inquiry" and "standard" reports in the financial reporting system			
Time and Effort System (GUI)	4/17/98 & 5/13/98	1:30–3:30	$200	Course #11759
	The participants will receive hands-on instruction on how to enter attendance for previous, current, and future time, validate and approve time using the point and click capability of the mouse. In addition, participants will learn how to perform mass records for individuals or entire cost centers, unapprove time, and retrieve reports. All participants must have an ICN password or a SmartCard to access the system.			
Travel (Domestic)	4/21/98 & 5/19/98	8:30–12:00	$375	Course #12113
	The participant will learn how to utilize the new Travel System GUI. This system allows user to submit and approve travel expenses on-line for domestic, foreign, and one-day travel. participant will learn to create trips, edit current trips, submit for pre- and post-approval, view summary sheets, and learn the new policies that effect the travel system.			

Advanced Technical Computer Training

The Customer Service Group (CIC-6) supports advanced technical training in computing areas such as programming languages, system administration, networking, and World Wide Web development tools. The support provided by CIC-6 can be as limited as providing the appropriate facilities for a specific group or as extensive as coordinating training functions such as system administration, vendor acquisition, EDS administration, and class facilitation. The table below lists classes that are either currently being offered or are available on request. An expanded list of classes that are potentially available can be viewed on the Internet at http://www.lanl.gov:8010/computer-information/ComputerTraining/Vendor.html. To request registration in any course or for general assistance, please contact the CIC-Division Advanced Technical Computer Training Coordinator at (505) 667-9399 or send e-mail to cic6-train@lanl.gov. *Cost per student will vary depending on the total number of students enrolled in the class.

Course Title	Date	Cost	Course Number
C++ for Experienced C Programmers	8/17–21/98	$1800–$2300*	9050
	Prerequisite(s): Excellent C Language programming skills. Topics Include: Major Differences and Additions to ANSI C; Building C++ Classes; Introduction to Text I/O with C++; Function Overloading; Single Inheritance; Virtual Functions; Multiple Inheritance; Operator Overloading; Creating, Initializing and Assigning Objects; Passing and Returning Objects; Templates, Parameterized Functions and Classes; C++Stream I/O with the File System; and C++ Course Summary.		
C-Shell Programming	Available on Request (5 days)	$1800–$2300*	4790
	Prerequisite(s): Knowledge of basic Unix commands and the ability to use basic programming constructs, such as variables and loops, to write simple programs in at least one programming language. Topics Include: Use Local and Environment Variables; Use Shell Metacharacters and Redirection; Perform Basic String Manipulations and Integer Arithmetic; Use Aliases, History, and Exit Status to Determine if a Command Succeeded or Failed; Employ Flow-Control Constructs (Branching and Loops); Customize the .cshrc and ..login Start-up Scripts and the Search Path and Prompt; Create and Debug C-Shell Scripts; Create a C-Shell Script That Interacts With Users, Accesses Command-Line Arguments, Returns an Exit Status, and Makes Decisions Based on Numeric Comparison, String Comparison, or Command Exit Status.		
IDL 5.0 Graphic Object Workshop	4/14–16/98	$1100–$1400*	
	Prerequisite(s): Completion of Foundations of IDL Programming course or equivalent knowledge and experience.Topics Include: IDL Objects (Object Inheritance and Encapsulation, Object Methods, Creating and Destroying Objects, and Memory Tricks); IDL Object Graphics Workshop - Building an IDL Object Graphics Application (Building an Object Graphics Hierarchy, View-Model Hierarchy and Container Objects, Graphics Atoms [Plot, Surface, Image, Polygon, Polyline], Positioning and Rotating Objects in 3D Space, Light Sources, Color Models - RGB vs. Indexed, System Fonts and 3D Text, Texture Maps, Creating Contours with Object Graphics, IDL Pointers to Pass Data, Using IDL Draw Areas for Object Graphics, Implementing Background Tasks, Bulletin Board Base to Change Object Properties, WYSIWYG Printing, and Helper Objects [Annotations]); and Linking IDL with Other Languages (Call_External, Linkimage, and Callable IDL).		
Java Programming	Available on Request (5 days)	$1800–$2300*	11686
	Prerequisite(s): Students must have the ability to create compiled programs using an advanced language (such as C or C++) and the knowledge to use basic Solaris commands and a World Wide Web browser (such as Mosaic or Netscape). Topics Include: Using the Java Programming Language to Create Java Applications and Applets; Defining and Describing Garbage Collection, Security, and the Java Virtual Machine; Describing and Using the Object-Oriented Features of the Java Language; Developing Graphical User Interfaces in Java, Taking		

Course Title	Date	Cost	Course Number
Java Programming (continued)	Advantage of the Various Layout Managers Supported by Java; Describing and Using the Java 1.1 Delegation Event Model; Using Java Windowing Components, Including Mouse Input, Text, Window, and Menu Components; Using Java Exceptions to Control Program Execution and Define Custom Exceptions; Using the Advanced Object-Oriented Features of the Java Language, Including Method Overriding and Overloading, Abstract Classes, Interfaces, Final and Static, and Member and Field Access Control; Using Java to Perform File Input/Output; Using Java's Built-In Threading Model to Control the Behavior of Multiple Threads; and Using Java to Access Servers and Clients Through Sockets.		
Object-Oriented Analysis and Design	Available on Request (4 days)	$1400–$1800	9049
	Prerequisites: Familiarity with fundamental programming concepts (data structures, types, control flow selection, iteration, etc.). Prior experience in systems or software analysis and/or development is useful but not required. Topics Include: Introduction to Objects; Terminology; Foundations and Goals of OOAD; Attributes of Complex Systems; Principles and Features of the Object Model; Object-Oriented Technology and Traditional Approaches; Benefits and Limitations of OOAD; Application Areas and Examples; Purposes of Analysis; Analysis Tasks and Tools; Identifying Relationships, Operations, and Mechanisms; Elements of Design; Design Issues and Problems; Rapid Prototyping; Areas for Research; Object-Oriented Tools (Overview of OOPLs, Introduction to Object-Oriented Databases, and Introduction to Other Object-Oriented Tools); Texas Instruments Case Study; and Management Issues (Transitioning to OO Methods, Choosing the First Project, Migration Strategies, and Managing an OO Project).		
Perl Programming	5/5–8/98	$1400–$1800	8095
	Prerequisites: Knowledge of Unix and basic programming constructs (such as variables and loops) and the ability to write simple programs in at least one programming language. Topics Include: Use PERL's Scalar Variables, Arrays, and Associative Arrays, Including Built-In Functions; Use PERL's Various Operators (Arithmetic, Conditional, String, Etc.); Use Regular Expression Metacharacters and Statement Modifiers; Open Files, Directories, and Input/Output Filters via Filehandlers; Use the UNIX System Interface Functions; Create Subroutines and Use the PERL Standard Library; Use Packages for Encapsulation; Handle Signals and Errors; and Write Nawk-Like Reports.		
SGI Network Administration	4/20–24/98	$1800–$2300*	11690
	Prerequisite(s): Completion of Silicon Graphics System Administration (Beginning) course or equivalent knowledge and experience. Topics Include: Networking Fundamentals; Network Configuration; Network Troubleshooting; Resource Management with Network; Information Services; Domain Management with Domain Name System; Electronic Mail with Sendmail; Remote File Sharing with Network File System & Automounter; Network Performance Monitoring; and Network Security.		
Solaris 2.X Network Administration	6/8–12/98	$1800–$2300*	8107
	Prerequisite(s): Completion of Solaris 2.X System Administration (Beginning) class or equivalent knowledge and experience. Topics Include: TCP/IP Networking Model's Major Protocols; Monitor Network Traffic; Monitor and Control the Address Resolution Protocol Cache; Set Up, Configure, and Manage a Sun Internet Router with Subnets; Identify the Differences Between TCP and UDP; Manage Client-Server Transport Layer Communications; Configure and Maintain RPC-Based Applications Support; Describe Common Applications, Systems, and Network Bottlenecks; Test and Monitor System, Disk, and Network Loads; Use Monitoring Commands to Find Performance Bottlenecks; Set Up and Maintain a Simple Domain Naming Service (DNS) Environment; Set Up a Jumpstart Automated Network Installation Server; Identify Sendmail Functionality and Configuration; Install a Mail Server; and Install UUCP Between Existing Solaris 2.X Systems.		

Course Title	Date	Cost	Course Number
UNIX (Basic)	7/21–24/98	$400	5267
	Prerequisites: Basic computer literacy (knowledge of the keyboard and mouse) are helpful. Topics: Getting Started; UNIX File System; Editing with VI; Manipulating Files; Using C-Shell Features; Customizing Your Environment; Navigating the Network; Job Control; Generic UNIX E-mail; and Electronic Mail Registration (EMR).		
UNIX (Advanced)	8/11–14/98	$400	12972
	Prerequisites: The Basic Unix class or equivalent knowledge. Topics: File Manipulation; File Reorganization; Network File System Concepts; Introduction to C-Shell Scripts; Conditional Execution; Shell Programming; The Korn Shell; Korn Shell Script Features; and SED Filtering Tool.		
UNIX and Windows NT Integration	Available on Request (4 days)	$1400–$1800	14608
	Prerequisite(s): Familiarity with Unix and NT network administration and TCP/IP protocols is useful. Topics Include: Common NOS Characteristics; Comparing the Operating Systems; Developing an Integration Strategy; Identifying Elements to Integrate; Integrating Protocols; Optimizing Protocols in the Enterprise Environment; Administering IP Addresses; Network File System (NFS); Server Message Block (SMB); Printing Across the Enterprise; Configuring User Accounts; Application Support; Remote System Administration; Resolving IP Addresses; IP Routing; Running Diagnostic Utilities; and Resolving Network Problems.		
Visual C++ Windows Programming	Available on Request (5 days)	$1800-$2300	12115
	Prerequisites: C Programming experience. Topics Include: Concepts of Object-Oriented Programming; Introduction to Visual C++; Classes in C++; Functions in C++; Constructors and Destructors; Memory Management in C++; References and Argument Passing in C++; Operator Overloading, Initialization, and Assignment; Scope and Access Control; Introduction to Inheritance; Polymorphism and Virtual Functions; Windows Event Handling; Graphics Device Interface; The Mouse; Menus and Resources; Dialog Boxes with MFC; The Keyboard; Document/View Architecture and MDI; and Memory Management and Windows Application Portability.		
Visual Basic 5.0 Fundamentals	Available on Request (5 days)	$1800-$2300	14609
	Prerequisites: Familiarity with the Windows interface; basic knowledge of word processing and spreadsheet applications; and knowledge of COBOL, Basic, or another language including experience using variable, control structures, and looping structures. Topics Include: Introduction to Application Development with Visual Basic; Creating a Simple Visual Basic-Based Application; Working With Forms; Working With Controls; Using Variables and Procedures; Controlling Program Execution; Debugging and Handling Errors; Validating Input and Manipulating Data; Implementing Menus, Status Bars, and Toolbars; Accessing Data With the Data Control; Introduction to ActiveX; and Adding the Finishing Touches.		
Windows NT Security	Available on Request (5 days)	$1800–$2300*	14611
	Prerequisite(s): Windows NT 4.0 Workstation and Server class (EDS # 12729) or equivalent knowledge and experience. Topics Include: An Overview of Security Objectives; Developing a Windows NT Security Policy; Trusted Computing Base (TCB); Microsoft's Security Commitment; Practical Implications of C2 Security; The NT Security Subsystem; NT Security Components; Planning Domains; Managing Accounts and Groups; The Windows NT Server and its Registry; Setting Up Shared Resources; Basic ACLs for Files and Directories; Controlling Access; Mechanics of Auditing; Common Auditing Scenarios; Tracking Applications with Security Logs; Protecting Your Network from Hostile Intruders; Securing Microsoft IIS; Implementing Firewalls; Thwarting the Threat from Within; and The Evolution of Windows NT Security.		

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Los Alamos
National Laboratory

INTEGRATED COMPUTING NETWORK (ICN) VALIDATION REQUEST

Instructions:

(1) Complete all parts of this form that apply to you. Please take note of the "Special Requirements" section and complete any applicable parts.
(2) Manager (Group Leader or above) authorization and signature are required for all validation requests.
(3) Before submitting this request, ensure that your Employee Information System (EIS) information is current.
(4) Once completed, either mail this request to the Password Office at MS-B251, fax it to (505) 667-9617, or, if you are cleared, handcarry it to TA-3, SM-200, Room 257.

If you have **questions** call (505) 665-1805 or send e-mail to validate@lanl.gov

Owner Information

Z-Number (if you have one)			Name (last, first, middle initial)
LANL Group	Phone Number	LANL Mail Stop	Citizenship (Foreign National see "Special Requirements-Foreign National")

Check LANL affiliation:

- ☐ LANL employee
- ☐ Contractor _____ (specify contract company)
- ☐ External user_____ (specify employer)
- ☐ Other (specify)_____

Send password / smartcard to:

☐ Mail Stop or ☐ Mail to address indicated below

Name / Organization
Address
City, State, Zip Code

Access

Check access method and needed partitions:

Access method: ☐ ICN Password ☐ Smartcard ☐ Both

☐ **Open** partition (e.g., open machines, or for dial up access)

☐ **Administrative** partition (e.g., Travel, Data Warehouse, IA [BUCS, Stores], IB [EIS, FMIS, PAIRS])
If you are not a cleared LANL employee, see required steps in section "Special Requirements-Administrative Partition".

☐ **Secure** partition (i.e., secure machines)
A Q-clearance is required for secure access. After obtaining Manager signature for Secure access, handcarry this form to the Password Office to obtain your Secure account.

I certify this person does require **secure** access:

_____ _____
Manager Signature (Group Leader or above) Date

Password Office Use Only

New ☐ Change ☐	Clearance Status	Processed	Lv	Smartcard Serial #
Comments:				

Form 1646 (3/95) Supersedes previous versions (rev. 4/97).

Continue

Special Requirements

Administrative Partition
Lab-Wide Systems (e.g., Travel, Data Warehouse, IA [BUCS, Stores], IB [EIS, FMIS, PAIRS])

☐ Under 18 years of age

If you need to access Administrative systems, your Group Leader must provide a memo accepting responsibility for your actions and justifying your need for access. This memo is to accompany all forms taken to the security briefing (see "Contractor or Non-Cleared") section below. You may not access the Secure Partition.

☐ Contractor or Non-Cleared

Phone (505) 665-4444 (option #2) to obtain Access Authorization packet.

Phone (505) 667-9153 to schedule a security briefing.

Bring all forms including this ICN Validation Request to the security briefing for approval.

CIC-6 Security Briefing Approval Signature	Date

☐ Foreign National

Attach a copy of Form 982 (REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONAL) with all approval signatures. Be sure Box #11 of Form 982 is completed. If you are not a visitor/assignee under a LANL/DOE approved Visit / Assignment Request, attach written justification from your host Group Leader or Division Director describing your need to access the ICN.

Authorization (required)

Print Manager Name (Group Leader or above)	Manager Z-Number	Group
Manager Signature (Group Leader or above)	**Mail Stop**	**Date**

If you are NOT a LANL employee you must have a LANL contact and obtain the contact's signature in addition to the contact's manager's signature.

LANL contact: Read the following and sign below.

By signing this form I affirm that I understand and accept the following:

a. I am a regular Laboratory employee.

b. I am responsible for forwarding password reauthorizations and verifying annual account reauthorizations for this user.

c. I am responsible for notifying the Password Office within 10 days of changes in my status.

d. I am responsible for notifying the Password Office immediately of changes in this user's status (termination, end of contract, etc.).

Print LANL Contact Name	Contact Z-Number	Phone Number	Group
LANL Contact Signature		Mail Stop	Date

NOTE: All Laboratory computers, computing systems, and their associated communication systems are for official business only. By completing this validation request and signing for a password and/or smartcard, you agree not to misuse the ICN. The Laboratory has the responsibility and authority to perodically audit user files.

Reader Feedback

Feedback helps us to provide a document that responds to the changing needs of its readership. If you have comments or questions about this publication, please let us hear from you. We have reserved the back of this form for that purpose. We also accept articles for publication that are of interest to our readers. Contact the managing editor for more information. This form is also used for new subscriptions, deletions, or changes. Instructions are on the back. If you prefer to contact us by E-mail, send your comments and/or subscription request to finney@lanl.gov.

Do Not Staple
Fold on This Line First

cut along dashed line

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 88 LOS ALAMOS NM

POSTAGE WILL BE PAID BY THE ADDRESSEE

MAIL STOP B251
ATTN: MIKE FINNEY, MANAGING EDITOR
CUSTOMER SERVICE GROUP (CIC-6)
LOS ALAMOS NATIONAL LABORATORY
PO BOX 1663
LOS ALAMOS NM 87544-9916

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